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## LIABILITY RULES FOR SURFACE WATER DRAINAGE: A SIMPLE ECONOMIC ANALYSIS

D.H. Cole\*

### INTRODUCTION

The law of surface water drainage has evolved dramatically in the last half-century. Spurred by economic considerations of equity and efficiency, courts have replaced longstanding property rules based on antiquated notions of absolute dominion and strict servitude with a rule based on the reasonableness standard of Tort law. Today, a majority of states favor the "reasonable use" rule for resolving surface water disputes over the "common enemy" and "natural flow" theories.<sup>1</sup>

Drainage disputes typically arise as a consequence of land development. Alterations in land gradation and construction affect the flow of diffused surface waters, often to the detriment of neighboring properties.<sup>2</sup> For most of U.S. history courts decided such disputes under either the common enemy rule, which creates an absolute entitlement to use and improve land,<sup>3</sup>

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<sup>1</sup>Presently, 18 states exclusively employ the reasonable use rule, 14 states exclusively employ the civil law's natural flow theory, and 13 states exclusively employ the common enemy doctrine. See *infra* notes 83-99, 58-71, 25-37, respectively.

<sup>2</sup>"[S]urface waters consist of waters from rains, springs, or melting snow which lie or flow on the surface of the earth, but which do not form a part of a well-defined body of water or natural watercourse." *Collins v. Wickland*, 251 Minn. 419, 424, 88 N.W.2d 83, 87 (1958). See also Kinyon and McClure, *Interferences with Surface Waters*, 24 Minn. L. Rev. 891, 891 n.1 (1940). When the surface waters flow together, forming a well-defined channel, they lose their diffused character, and rules governing watercourses apply. Comment, *Toward a Unified Reasonable Use Approach to Water Drainage in Washington*, 59 Wash. L. Rev. 61, 68 (1983).

<sup>3</sup>Specifically, the common enemy doctrine permits landowners to alter surface water flows with impunity for resulting damages to neighboring properties. See *infra* notes 12-38 and accompanying text. In effect, it represents what Professor Ellickson has called a "laissez faire distribution of property rights." Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. Chi. L. Rev. 681, 719 (1973).

The conceptual distinctions between Property and Tort theories are minimized by regarding the competing interests as "entitlements," protected by property or liability rules. See Calabresi and Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 Harv. L. Rev. 1089, 1090 (1972). In drainage disputes, as in all cases involving competing interests, courts must choose which property right is "entitled" to protection. After choosing the entitlement, the court must determine how best to protect that entitlement, *i.e.*, the court must fashion a suitable remedy. *Id.* at 1092. As this article illustrates, the court's choice of remedy effects economic efficiency and cost allocation every bit as much as its choice of entitlement.

or the civil law's natural flow theory, which creates a converse entitlement to protect land from interferences with natural drainage.<sup>4</sup> A third rule, based on the Tort concept of reasonable use, originated in the 1860s, but as of 1940 only two states employed it to resolve drainage disputes.<sup>5</sup> This reasonable use rule grants landowners a qualified entitlement to make cost-effective improvements.<sup>6</sup>

Since 1940, sixteen states have abandoned one or the other of the old rules in favor of the reasonable use theory.<sup>7</sup> The basis for this change has been largely economic. Courts and commentators perceived that the Tort-based theory would produce more efficient<sup>8</sup> and more equitable results.<sup>9</sup> Unfortunately, they were mistaken.

This article examines the economic consequences of the three theories of liability for surface water drainage. It concludes that while the reasonable use rule is economically justifiable and generally promotes efficient development, the theory unfairly allocates the costs of improvements, allowing the "reasonable" user to divert her improvement costs—along with the water—to her unconsenting neighbor. The common enemy rule is even worse, serving neither efficiency nor equity. Only the natural flow theory is capable of combining efficient development with fair results.<sup>10</sup> By imposing liability in every case, the natural flow theory equitably allocates improvement costs while permitting courts to obtain efficient results.

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<sup>4</sup>Specifically, this rule creates liability for any interference with natural surface water flows. *See infra* notes 39-72 and accompanying text.

<sup>5</sup>Kinyon & McClure, *supra* note 2, at 908 ("At the present time only two jurisdictions can be fairly said to have adopted the full reasonable use rule — New Hampshire and Minnesota.").

<sup>6</sup>Specifically, this rule insulates landowners from liability for damages resulting from "reasonable" alterations in surface water flows. *See infra* notes 73-103 and accompanying text. On qualified or "intermediate" entitlements, *see* Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 *Stan. L. Rev.* 1075, 1086-87 (1980); *see also supra* note 5 and accompanying text.

<sup>7</sup>*See infra* notes 84-99 and accompanying text.

<sup>8</sup>*See, e.g.,* Burnett, *Surface Water and Nuisance Law: A Proposed Synthesis*, 20 *Idaho L. Rev.* 185, 193 (1984) ("A standard of reasonableness, with its balancing approach, provides the closest judicial equivalent to efficient allocation of resources through voluntary transfers."); Comment, *The Flow of Surface Water Law in Connecticut*, 14 *Conn. L. Rev.* 601, 608 (1982).

<sup>9</sup>*See, e.g.,* County of Clark v. Powers, 96 Nev. 497, 503, 611 P.2d 1072, 1076 (1980) ("[T]he reasonable use rule allows for a more equitable allocation of the incidental economic costs . . . than does the natural flow rule."); Butler v. Bruno, 115 R.I. 264, 274, 341 A.2d 735, 741 (1975) ("[T]he [reasonable use] standard which we embrace today will permit a more equitable allocation of the costs of such improvements, for the owner improving his land must take into consideration the true cost of such development to the community."); Comment, *Massachusetts Law - Surface Waters - Effect of Reasonable Use Standard on Surface Water Controversies*, 2 *W. New Eng. L. Rev.* 549, 558-59 (1980) ("By rejecting the common enemy rule and adopting the reasonable use rule in 1978, the Massachusetts court has taken a great step toward implementing the current social policy of just allocation of development costs.").

<sup>10</sup>This article is not the first to posit this thesis. *See* Comment, *California's Surface Waters*, 39 *So. Cal. L. Rev.* 128, 135-36 (1966).

Part I of this article explicates the American laws of drainage. Part II evaluates the three theories of liability, in their pure and modified formulations, for economic efficiency and distributional fairness. The two key factors in that evaluation are (1) whether the theories create liability constraining only inefficient improvements; and (2) what remedies they provide. In the final analysis, the natural flow theory, if generally restricted to an actual damages remedy, promotes economic efficiency *and* distributional fairness far better than either the common enemy doctrine or the reasonable use rule.

## I. THE LIABILITY RULES

The three American rules for resolving surface water disputes developed contemporaneously in the mid-nineteenth century. However, they developed independently. Early cases that adopted the common enemy rule, for instance, typically did not consider the other theories of liability.<sup>11</sup> But, as the country entered the twentieth century, courts began to compare and reassess the rules, modifying their applications to reflect changed societal conditions.

### A. *The Common Enemy Rule*

Historically misassociated with the common law of England,<sup>12</sup> the common enemy doctrine appeared in U.S. court decisions as early as 1851.<sup>13</sup> Under this doctrine, any landowner may alter with impunity the flow of surface waters to or from adjoining lands.<sup>14</sup> Contrary to contemporary understanding, the early courts did not employ this rule primarily to promote society's interest in land development.<sup>15</sup> The cornerstone of the common enemy rule was the ancient property maxim *cujus est solum, ejus est usque ad coelum* (whose is the soil, his it is up to the sky).<sup>16</sup>

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<sup>11</sup>See Kinyon & McClure, *supra* note 2, at 902. Likewise, early cases adopting the natural flow theory did not consider the common enemy doctrine. *Id.* at 895. Neither did they consider the reasonable use rule. *Id.* at 895 n.14.

<sup>12</sup>The English courts have historically employed the civil law's natural flow theory of liability in surface water disputes. See Maloney & Plager, *Diffused Surface Water: Scourge or Bounty?*, 8 Nat. Res. J. 72, 78 (citing *Ewart v. Cochrane*, 4 Macq. H.L. Cas. 117, 7 Jur. N.S. 925, 5 L.T.N.S. 1, 10 Week Rep. 3 (1861)). Nevertheless, some U.S. courts adopted the common enemy doctrine specifically because they believed it represented the English common law. See *Edwards v. Charlotte, C. & A. R.R. Co.*, 39 S.C. 472, 474-75 (1893); *Abbott v. Kansas City, St. J. & C. B. Ry.*, 83 Mo. 271 (1884). See also Kinyon & McClure, *supra* note 2, at 899-902.

<sup>13</sup>*Luther v. Winnisimmet Co.*, 63 Mass. (9 Cush.) 171 (1851).

<sup>14</sup>The clearest early statement of this rule is found in *Gannon v. Hargadon*, 92 Mass. (10 Allen) 106 (1865).

<sup>15</sup>But see *Barkley v. Wilcox*, 86 N.Y. 140, 148 (1881) ("Society has an interest in the cultivation and improvement of lands, and in the reclamation of waste lands. It is also for the public interest that improvements shall be made, and that towns and cities shall be built.').

<sup>16</sup>See *Gannon*, 92 Mass. (10 Allen) at 109-110 ("[T]he right of a party to the free and unfettered control of his own land above, upon, and beneath the surface cannot be interfered with or restrained by any considerations of injury to others which may be occasioned by the flow of mere surface water.').

The right to alter drainage patterns was incidental to the landowner's absolute dominion over her property. Resulting damages to neighboring landowners afforded no cause of action.<sup>17</sup> Neighbors could respond only by making improvements or constructing barriers of their own, or by purchasing negative easements.

In this extreme form, the common enemy rule encouraged land improvement by completely insulating developing landowners from liability.<sup>18</sup> And, according to courts and commentators, the pure common enemy rule minimized litigation because it delineated with certainty the rights of adjoining landowners.<sup>19</sup>

But, while the common enemy rule kept landowners out of court, it hardly resolved their disputes. Rather, it fostered escalating drainage wars, limited only by landowners' means and imagination.<sup>20</sup> Eventually, the detrimental effects of the extreme common enemy rule, along with changed societal conditions that no longer prescribed land development at all costs, impelled courts to modify the rule.

Many courts alleviated the injuries visited on neighboring properties by holding improving landowners liable for harmful discharges using artificial drainways.<sup>21</sup> They also imposed a good faith requirement prohibiting malicious and negligent discharges.<sup>22</sup> Many states began requiring developing landowners to use "reasonable care" to avoid unnecessary damage to adjoining properties.<sup>23</sup>

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<sup>17</sup>See *id.* at 110 ("A party may improve any portion of his land, although he may thereby cause the surface water flowing thereon, whencesoever it may come, to pass off in a different direction and in larger quantities than previously. If such an act causes damages to adjacent land, it is *damnum absque injuria*.").

<sup>18</sup>See, e.g., Kinyon & McClure, *supra* note 2, at 898-99 (citing *Barkley v. Wilcox*, 86 N.Y. 140, 148 (1881)).

<sup>19</sup>See, e.g., Maloney & Plager, *supra* note 12, at 78; *Butler v. Bruno*, 115 R.I. 264, 268, 341 A.2d 735, 737 (1975). There is no evidence that application of the common enemy rule has minimized litigation, compared to civil law and reasonable use jurisdictions.

<sup>20</sup>See Maloney & Plager, *supra* note 12, at 78 ("[L]andowners are encouraged to engage in contests of hydraulic engineering in which might makes right, and breach of the peace is often inevitable.").

<sup>21</sup>See, e.g., *Lindamood v. Board of Educ.*, 92 W. Va. 387, 114 S.E. 800 (1922). See also Comment, *Ohio Surface Water Rights*, 38 Cinn. L. Rev. 525, 526 (1969).

<sup>22</sup>See Maloney & Plager, *supra* note 12, at 79.

<sup>23</sup>See, e.g., *Harris Motor Co. v. Pulaski Furniture Co.*, 151 Va. 125, 144 S.E. 414 (1928); *Mullins v. Greer*, 226 Va. 587, 311 S.E.2d 110 (1984).

In 1940, twenty-two jurisdictions employed the common enemy rule.<sup>24</sup> Today, only thirteen jurisdictions retain it, including Arizona,<sup>25</sup> Arkansas,<sup>26</sup> Indiana,<sup>27</sup> Maine,<sup>28</sup> Missouri,<sup>29</sup> Montana,<sup>30</sup> Nebraska,<sup>31</sup> New York,<sup>32</sup> Oklahoma,<sup>33</sup> South Carolina,<sup>34</sup> Virginia,<sup>35</sup> Washington,<sup>36</sup> and the District of Columbia.<sup>37</sup> Two states, Alabama and Kansas, apply the common enemy rule only in urban drainage disputes.<sup>38</sup>

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<sup>24</sup>See Kinyon & McClure, *supra* note 2, at 902-04 (listing Arizona, Arkansas, Connecticut, District of Columbia, Indiana, Maine, Massachusetts, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Rhode Island, South Carolina, Virginia, Washington, West Virginia and Wisconsin).

<sup>25</sup>See, e.g., *Roosevelt-Irrigation Dist. v. Beardsley Land & Investment Co.*, 36 Ariz. 65, 282 P. 937 (1929).

<sup>26</sup>See, e.g., *McCoy v. Board of Directors of Plum Bayou Levee Dist.*, 95 Ark. 345, 129 S.W. 1097 (1910).

<sup>27</sup>See, e.g., *Argyelan v. Haviland*, 435 N.E.2d 973, 977-78 (Ind. 1982) (expressly disapproving an appellate court decision adopting the reasonable use rule in *Rounds v. Hoelscher*, 428 N.E.2d 1308 (Ind. Ct. App. 1981)).

<sup>28</sup>See, e.g., *Johnson v. Whitten*, 384 A.2d 698 (Me. 1978).

<sup>29</sup>See, e.g., *M.H. Siegfried Real Estate v. City of Independence*, 649 S.W.2d 893 (Mo. 1983).

<sup>30</sup>See, e.g., *Tillinger v. Frisbie*, 138 Mont. 60, 353 P.2d 645 (1960).

<sup>31</sup>See, e.g., *Shotkoski v. Prososki*, 219 Neb. 213, 362 N.W.2d 59 (1985).

<sup>32</sup>See, e.g., *Buffalo Sewer Authority v. Town of Cheektowaga*, 20 N.Y.2d 47, 228 N.E.2d 386 (1967).

<sup>33</sup>See, e.g., *Iven v. Roder*, 431 P.2d 321, 328 (Okla. 1967). *But see*, *Dobbs v. Missouri Pacific R.R.*, 416 F. Supp. 5, 9 (E.D. Okla. 1975) (apparently applying the common enemy rule in a way equivalent to the reasonable use rule).

<sup>34</sup>See, e.g., *Abrams v. Wright*, 262 S.C. 141, 202 S.E.2d 859 (1974).

<sup>35</sup>See, e.g., *Mullins v. Greer*, 226 Va. 587, 311 S.E.2d 110 (1984).

<sup>36</sup>See, e.g., *Island County v. Makie*, 36 Wash. App. 385, 675 P.2d 607 (1984).

<sup>37</sup>See, e.g., *Ballard v. Ace Wrecking Co.*, 289 A.2d 888 (D.C. 1972).

<sup>38</sup>See, e.g., *Dekle v. Vann*, 279 Ala. 153, 182 So. 2d 885 (1966); *Goering v. Schrag*, 167 Kan. 499, 207 P.2d 391 (1949). On urban drainage disputes, *see infra* note 53 and accompanying text.

## B. *The Civil Law Rule: Natural Flow Theory*

Like the common enemy rule, the natural flow theory had its origins in ancient Roman property rules,<sup>39</sup> but the theories are antithetical. Where the common enemy rule insulated improving landowners from liability, the natural flow theory imposed liability for any harmful diversion.<sup>40</sup>

Based on the maxim *aqua currit, et debet currer, ut solebat es juie naturae* (water runs, and it should run, as it is used to run naturally), the natural flow theory creates a servitude requiring landowners to accept waters naturally flowing from higher lands. The lower-landowner cannot divert those waters at the higher-landowner's expense, but neither can the higher-landowner increase the burden on the servient estate by increasing the flow or changing its course.<sup>41</sup>

The courts of Louisiana imported the natural flow theory from the civil law of France in 1812.<sup>42</sup> But, the theory did not win wide acceptance in the United States until the second half of the nineteenth century.<sup>43</sup> By 1940 eighteen states purported to employ the civil law rule exclusively.<sup>44</sup>

Like the common enemy rule, the natural flow theory had the benefit of predictability—landowners' rights were delineated with certainty.<sup>45</sup> And, the natural flow theory sensibly paralleled existing rules applying to watercourses.<sup>46</sup> It also had the benefit of fairness; courts early on recognized

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<sup>39</sup>See *supra* note 16 and accompanying text, and *infra* note 41 and accompanying text.

<sup>40</sup>See Kinyon & McClure, *supra* note 2, at 893.

<sup>41</sup>See, e.g., *Livingston v. McDonald*, 21 Iowa 160, 168 (1866). See also *Maloney & Plager, supra* note 12, at 76.

<sup>42</sup>*Orleans Navigation Co. v. New Orleans*, 2 Mart. 214 (Orleans 1812). The theory also has ties to the common law of England. See *Maloney & Plager, supra* note 12, at 76. This is ironic, considering that the common enemy rule has been called the "common law rule," though it has no ties to the common law of England. See *supra* note 12 and accompanying text.

<sup>43</sup>Pennsylvania was the first state to adopt the civil law rule after Louisiana. See *Martin v. Riddle*, 26 Pa. 415 (1848).

<sup>44</sup>See Kinyon & McClure, *supra* note 2, at 896-97 (listing Alabama, California, Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Nevada, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee and Texas).

<sup>45</sup>See *Keys v. Romley*, 64 Cal. 2d 396, 402, 412 P.2d 529, 532, 50 Cal. Rptr. 273, 276 (1966).

<sup>46</sup>See *Gormley v. Sanford*, 52 Ill. 158, 162 (1869).

that the natural flow rule was more equitable than the common enemy rule because it imposed all improvement costs on the improving landowner.<sup>47</sup> In addition, they recognized that application of this rule preserved agricultural lands.<sup>48</sup>

By the turn of the century, however, commentators and courts in many jurisdictions increasingly condemned the rule for hindering land development.<sup>49</sup> Courts also criticized the civil law rule because of the evidentiary burden it presented; it was no simple matter to determine the course and amount of flow before diversion in order to determine the extent of the damages.<sup>50</sup>

Many courts relied on these criticisms in modifying the natural flow theory. Their modifications effectively limited access to the courts by insulating improving landowners from liability for certain types or degrees of flow alteration. For example, some jurisdictions allowed landowners to increase surface water flows without liability, so long as they used natural drainways.<sup>51</sup> Many states began to employ a balancing test under which an improving landowner would be held liable only for negligent or

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<sup>47</sup>*See, e.g., id.* ("[T]here can clearly be no other rule at once so equitable and so easy of application as that which enforces natural laws.").

<sup>48</sup>*Garland v. Aurin*, 103 Tenn. 555, 560-62, 53 S.W. 940, 941 (1899). This justification seems the flip-side to the oft stated criticism that the civil law rule impedes development. *See infra* note 49 and accompanying text.

<sup>49</sup>*See, e.g., Pendergrast v. Aiken*, 293 N.C. 201, 208, 236 S.E.2d 787, 791 (1977); *Butler v. Bruno*, 115 R.I. 264, 269, 341 A.2d 735, 738 (1975); *Keys*, 64 Cal. 2d at 402-03, 412 P.2d at 533, 50 Cal. Rptr. at 277; Burnett, *Surface Water and Nuisance Law: A Proposed Synthesis*, 20 Idaho L. Rev. 185, 192 (1984); Maloney & Prager, *supra* note 12, at 76; Comment, *Massachusetts Law - Surface Waters - Effect of Reasonable Use Standard on Surface Water Controversies*, 2 W. New Eng. L. Rev. 549, 553 (1980); Comment, *The Application of Surface Water Rules in Urban Areas*, 42 Mo. L. Rev. 76, 77 (1977).

However, there was no evidence suggesting that jurisdictions employing the civil law rule encountered any downturn in development. *See Keys*, 64 Cal. 2d at 407, 412 P.2d at 535, 50 Cal. Rptr. at 279 ("California's phenomenal growth rate, to which no one can be oblivious and of which this court may take judicial notice, appears unstunted by the existence and application of the civil law rule since 1873.").

<sup>50</sup>*Butler*, 115 R.I. at 269, 341 A.2d at 738. Nevertheless, this difficulty could not reasonably justify a rejection of the natural flow theory in favor of other rules that would not even provide plaintiffs an opportunity to prove their damages.

<sup>51</sup>*See, e.g., La Fleur v. Kolda*, 71 S.D. 162, 22 N.W.2d 741 (1946).



unreasonable changes in surface water flows.<sup>52</sup> In an even more drastic measure to spur development, some states replaced the natural flow theory with the common enemy doctrine or reasonable use rule for disputes arising in urban areas.<sup>53</sup>

The California Supreme Court in the case of *Keys v. Romley*,<sup>54</sup> developed a unique modification of the natural flow theory that obligated the neighbor, as well as the improving landowner, to act reasonably. Specifically, the neighbor must "take reasonable precautions to avoid or reduce any actual or potential injury."<sup>55</sup> But, this does not necessarily mean that neighboring landowners must incur costs to prevent harm; the facts of the case suggest that the court was primarily concerned with neighboring landowners who aggravate their losses, *e.g.*, by removing existing barriers that would have prevented harm.<sup>56</sup> In cases where both parties act reasonably, the improving landowner remains liable just as under the pure natural flow theory.<sup>57</sup>

Despite the criticisms and modifications, the natural flow theory has not incurred the same dramatic decline evidenced by the common enemy rule since 1940. Fourteen states continue to exclusively employ some form of the

<sup>52</sup>*See, e.g.*, *Vinson v. Turner*, 252 Ala. 271, 40 So. 2d 863 (1949); *Battisto v. Perkins*, 210 Md. 542, 124 A.2d 288 (1956).

In jurisdictions where courts have adopted a reasonableness test under the natural flow theory, the civil law rule mirrors the modified common enemy doctrine. While the one allows landowners to drain lands except by artificial drainways, the other prohibits drainage except by natural drainways. *See Maloney & Plager, supra* note 12, at 79. But, as Professors Maloney and Plager have warned, this does not mean the rules are effectively identical. In practical respects, such as burdens of proof, they remain opposed. *Id.* In addition, as the forthcoming economic analysis will demonstrate, the common enemy rule and natural flow theory can have vastly different effects on strategic behavior and overall efficiency, even in their modified versions. *See infra* Part II.

Similarly, the civil law rule as modified by reasonableness standards remains practically distinguishable from the reasonable use rule, although there has been some confusion of the two rules. For example, after *Keys v. Romley*, some lower courts in California mistakenly assumed that the state had adopted the reasonable use rule. *See, e.g.*, *Ellison v. City of San Buenaventura*, 60 Cal. App. 3d 453, 458 (1976). However, it is clear that the California Supreme Court in *Keys v. Romley* did not reject the civil law rule in favor of the rule of reasonable use. Where the reasonable use rule would insulate an improving landowner from liability for any reasonable change in surface water flow, the California natural flow theory modification would continue to find liability, so long as the injured neighbor also acted reasonably.

<sup>53</sup>*See, e.g.*, *Dekle v. Vann*, 279 Ala. 153, 182 So. 2d 885 (1966); *Goering v. Schrag*, 167 Kan. 499, 207 P.2d 391 (1949); *Mulder v. Tague*, 85 S.D. 544, 186 N.W.2d 884 (1971). *See also* Comment, *The Application of Surface Water Rules in Urban Areas*, 42 Mo. L. Rev. 76 (1977).

<sup>54</sup>64 Cal. 2d 396, 412 P.2d 529, 50 Cal. Rptr. 273 (1966).

<sup>55</sup>*Id.* at 409, 412 P.2d at 537, 50 Cal. Rptr. at 281.

<sup>56</sup>The court in *Keys v. Romley* determined that the plaintiffs were substantially responsible for their own injuries because they removed a dirt pile which might have prevented some of the flooding which occurred when the defendants improved their property. *Id.* at 411, 412 P.2d at 538, 50 Cal. Rptr. at 282.

<sup>57</sup>*Id.* at 409, 412 P.2d at 537, 50 Cal. Rptr. at 281.

natural flow theory. They include Colorado,<sup>58</sup> Georgia,<sup>59</sup> Idaho,<sup>60</sup> Illinois,<sup>61</sup> Iowa,<sup>62</sup> Louisiana,<sup>63</sup> Michigan,<sup>64</sup> New Mexico,<sup>65</sup> Oregon,<sup>66</sup> Pennsylvania,<sup>67</sup> Tennessee,<sup>68</sup> Texas,<sup>69</sup> Vermont,<sup>70</sup> and West Virginia.<sup>71</sup> Three other states, Alabama, Kansas, and South Dakota, employ the natural flow theory to resolve surface water disputes arising in rural areas.<sup>72</sup>

### C. *The Reasonable Use Rule*

Unlike the common enemy and natural flow theories, the reasonable use rule for resolving drainage disputes was not born of ancient Roman rules respecting absolute property rights. It is an American original based on the Tort principle of reasonableness. Under this rule, improving landowners are free to make reasonable use of their lands, even if this causes harmful changes in surface water flows.<sup>73</sup> What constitutes a "reasonable" use is determined case-by-case "in accordance with general principles of fairness and common sense," rather than by inflexible rules based on absolute property rights.<sup>74</sup>

The surface water rule of reasonable use is almost identical to the modern law of private nuisance. Under the Restatement (2d) of Torts, an actor is liable for a private nuisance if her conduct unreasonably interferes with the use and enjoyment of another's property.<sup>75</sup> Reasonableness is determined primarily in a cost-benefit analysis that weighs the gravity of the harm against the utility of the conduct. If the benefits outweigh the costs, the improving landowner is not liable.<sup>76</sup>

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<sup>58</sup>*City of Boulder v. Boulder & White Rock Ditch & Reservoir Co.*, 73 Colo. 426, 216 P.2d 553 (1923).

<sup>59</sup>*Gill v. First Christian Church*, 216 Ga. 454, 117 S.E.2d 164 (1960).

<sup>60</sup>*Smith v. King Creek Grazing Ass'n*, 105 Idaho 644, 671 P.2d 1107 (Ct. App. 1983).

<sup>61</sup>*Bodenschatz v. Parrott*, 153 Ill. App. 3d 1008, 506 N.E.2d 617 (1987).

<sup>62</sup>*Witthauer v. Council Bluffs*, 257 Iowa 493, 133 N.W.2d 71 (1965).

<sup>63</sup>*Walters v. Thrasher*, 381 So. 2d 557 (La. Ct. App. 1980).

<sup>64</sup>*Lewallen v. Niles*, 86 Mich. App. 332, 272 N.W.2d 350 (1978).

<sup>65</sup>*Martinez v. Cook*, 56 N.M. 343, 244 P.2d 134 (1952).

<sup>66</sup>*Garbarino v. Van Cleave*, 214 Or. 554, 330 P.2d 28 (1958).

<sup>67</sup>*Laform v. Bethlehem Township*, 346 Pa. Super. 512, 499 A.2d 1373 (1985).

<sup>68</sup>*Kind v. Johnson City*, 63 Tenn. App. 666, 478 S.W.2d 63 (1970).

<sup>69</sup>*City of Houston v. Renault, Inc.*, 431 S.W.2d 322 (Tex. 1968); *Abbott v. City of Princeton*, 721 S.W.2d 872 (Tex. Ct. App. 1986).

<sup>70</sup>*Swanson v. Bishop Farm, Inc.*, 140 Vt. 606, 443 A.2d 464 (1982), *overruled on other grounds in* *Soucy v. Soucy Motors, Inc.*, 143 Vt. 615, 471 A.2d 224 (1983).

<sup>71</sup>*Tierney v. Earl*, 153 W. Va. 790, 172 S.E.2d 558 (1970).

<sup>72</sup>*See, e.g.*, *Dekle v. Vann*, 279 Ala. 153, 182 So. 2d 885 (1966); *Goering v. Schrag*, 167 Kan. 499, 207 P.2d 391 (1949); *Mulder v. Tague*, 85 S.D. 544, 186 N.W.2d 884 (1971).

<sup>73</sup>*See* *Kinyon & McClure*, *supra* note 2, at 904.

<sup>74</sup>*Id.* at 905.

<sup>75</sup>RESTATEMENT (SECOND) OF TORTS § 822(a) (1977).

<sup>76</sup>*Id.* § 826(a). *But see infra* note 79 and accompanying text.

Similarly, courts applying the reasonable use rule for resolving drainage conflicts rely heavily on the cost-benefit analysis;<sup>77</sup> if the benefits to the improving landowner outweigh the costs to her neighbor, then the neighbor's injuries will not be remedied. In addition, courts applying the reasonable use rule often will inquire whether the improving landowner took steps to avoid unnecessary harm to neighboring lands and whether the drainage was reasonably necessary to effect the desired use or improvement.<sup>78</sup>

The Restatement (2d) of Torts expressly applies its nuisance analysis to surface water disputes,<sup>79</sup> but most states still consider the reasonable use rule a special doctrine of drainage law, distinct from the ordinary private nuisance action.<sup>80</sup> There are in fact significant differences between the two actions. For example, in a private nuisance claim under the Restatement, a harmful improvement is unreasonable *per se* if the court finds that the neighbor's injuries are too severe to go uncompensated, regardless of the cost-benefit analysis.<sup>81</sup> The reasonable use rule for resolving drainage disputes provides no similar exception for severe harm.<sup>82</sup>

In 1940, only New Hampshire and Minnesota employed the reasonable use rule to resolve surface water disputes.<sup>83</sup> Since then, sixteen states have abandoned one of the old Property-based doctrines in favor of the Tort-based rule. They include Alaska,<sup>84</sup> Connecticut,<sup>85</sup> Delaware,<sup>86</sup> Hawaii,<sup>87</sup> Kentucky,<sup>88</sup> Maryland,<sup>89</sup> Massachusetts,<sup>90</sup> Mississippi,<sup>91</sup> Nevada,<sup>92</sup> New Jersey,<sup>93</sup> North Carolina,<sup>94</sup> North Dakota,<sup>95</sup> Ohio,<sup>96</sup> Rhode Island,<sup>97</sup> Utah,<sup>98</sup>

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<sup>77</sup>See, e.g., *Enderson v. Kelehan*, 226 Minn. 163, 168, 32 N.W.2d 286, 289 (1948).

<sup>78</sup>See, e.g., *id.*

<sup>79</sup>RESTATEMENT (SECOND) OF TORTS § 833 (1977).

<sup>80</sup>See *Maloney & Plager*, *supra* note 12, at 80. *But see* *Pendergrast v. Aiken*, 293 N.C. 201, 216-17, 236 S.E.2d 787, 796-97 (1977) (treating the reasonable use rule as a private nuisance action under the Restatement (2d) of Torts).

<sup>81</sup>RESTATEMENT (SECOND) OF TORTS § 829A (1972).

<sup>82</sup>However, jurisdictions that treat the reasonable use rule as a private nuisance action under the Restatement appear to apply this exception. See, e.g., *Pendergrast*, 293 N.C. 201, 236 S.E.2d 787.

<sup>83</sup>See *supra* note 5.

<sup>84</sup>*Weinberg v. North Alaska Development Corp.*, 384 P.2d 450 (Alaska 1963).

<sup>85</sup>*Page Motor Co. v. Baker*, 182 Conn. 434, 438 A.2d 739 (1980).

<sup>86</sup>*Weldin Farms, Inc. v. Glassman*, 414 A.2d 500 (Del. 1980).

<sup>87</sup>*Cootey v. Sun Investment Co.*, 690 P.2d 1324 (Haw. App. Ct. 1984).

<sup>88</sup>*Klutey v. Commonwealth, Dept. of Highways*, 428 S.W.2d 766 (Ky. 1967).

<sup>89</sup>*Beane v. Prince George's County*, 20 Md. App. 383, 315 A.2d 777 (1974).

<sup>90</sup>*Tucker v. Badoian*, 376 Mass. 907, 384 N.E.2d 1195 (1978).

<sup>91</sup>*Hall v. Wood*, 443 So. 2d 834 (Miss. 1983).

<sup>92</sup>*County of Clark v. Powers*, 96 Nev. 497, 611 P.2d 1072 (1980).

<sup>93</sup>*Armstrong v. Francis Corp.*, 20 N.J. 320, 120 A.2d 4 (1956).

<sup>94</sup>*Pendergrast v. Aiken*, 293 N.C. 201, 236 S.E.2d 787 (1977).

<sup>95</sup>*Jones v. Boeing Co.*, 153 N.W.2d 897 (N.D. 1967).

<sup>96</sup>*McGlashan v. Spade Rockledge Terrace Condo Development Corp.*, 62 Ohio St. 2d 55 (1980).

<sup>97</sup>*Butler v. Bruno*, 115 R.I. 264, 341 A.2d 735 (1975).

<sup>98</sup>*Sanford v. University of Utah*, 26 Utah 2d 285, 488 P.2d 741 (1971).

and Wisconsin.<sup>99</sup> One other state, South Dakota, applies the reasonable use rule to all drainage disputes arising in urban areas.<sup>100</sup>

This dramatic emergence is due, in part, to dissatisfaction with the two Property-based rules. It also reflects a perception that the reasonable use theory is fairer simply because it is more flexible.<sup>101</sup> But, its flexibility also has inspired criticism of the rule by judges who believe it is "nothing more than an invitation to a lawsuit."<sup>102</sup> No doubt, where correlative rights remain ambiguous until delineated in court, lawsuits will proliferate. In addition, application of the reasonable use rule appears to present courts with the same evidentiary burden encountered under the natural flow theory: to complete its cost-benefit analysis, the court must assess the damages resulting from the drainage, and, therefore, must determine the pre-drainage direction and extent of surface water flow.<sup>103</sup> Nevertheless, an increasing number of jurisdictions appear prepared to accept these costs along with the seemingly obvious benefits of the reasonable use rule. Unfortunately, the courts employing this rule have assumed those benefits without testing the rule's precise effects. As the following economic analysis demonstrates, the benefits of the reasonable use rule are largely illusory.

## II. *Economic Analysis*

### A. *General Introduction: Goals and Assumptions*

The "best" liability rule for resolving surface water disputes depends on the goal(s) society elects. If unhindered land development is the goal, the common enemy rule clearly is best; if land preservation is the goal, the natural flow theory may be preferred. Today, economic goals prevail and the "best" rule most fairly allocates improvement costs while maximizing economic efficiency.<sup>104</sup>

#### 1. The Efficiency Goal

Put simply, a liability rule is efficient if it entitles profitable drainage and does not entitle unprofitable drainage. A drainage is profitable if its aggregate benefits exceed its aggregate costs (*i.e.*, costs to all parties),

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<sup>99</sup>Getka v. Lader, 71 Wis. 2d 237, 238 N.W.2d 87 (1976).

<sup>100</sup>Mulder v. Tague, 85 S.D. 544, 186 N.W.2d 884 (1971).

<sup>101</sup>In addition, its current popularity could be a function of its similarity to the common private nuisance action and the judiciary's craving for more discretion in deciding cases.

<sup>102</sup>Pagliotti v. Acquistaspace, 46 Cal. Rptr. 533, 540 (Ct. App. 1965), *vacated on other grounds*, 64 Cal. 2d 873, 412 P.2d 538, 50 Cal. Rptr. 282 (1966).

<sup>103</sup>See *supra* note 50 and accompanying text. This evidentiary problem has been generally ignored by the courts. Some courts have denied that the reasonable use rule presents any such burden. See, *e.g.*, Pendergrast v. Aiken, 293 N.C. 201, 216, 236 S.E.2d 787, 796 (1977).

<sup>104</sup>See *supra* notes 8-9 and accompanying text.

including transaction costs.<sup>105</sup> However, the court's choice of entitlement is only one factor in the efficiency equation; the remedy the court fashions to protect that entitlement also affects overall efficiency.

The court's choice of remedy impedes efficiency if it prohibits (or inhibits) a drainage that yields net social profits, or allows (or encourages) a drainage that generates net social costs. In some circumstances, the remedy may encourage "strategic behavior" by disputants, preventing them from bargaining to an efficient result.<sup>106</sup>

Theoretically, an actual damages remedy should always achieve an efficient outcome, assuming that the court has perfect information concerning the extent and nature of the harm resulting from the drainage. Actual damage awards merely redistribute costs, and therefore provide no incentive to strategic behavior; the remedy affords neither party an extra bargaining chip.<sup>107</sup> However, without perfect information, the court may over-estimate or under-estimate damages, and thereby compromise efficiency.<sup>108</sup> In addition, if land uses or values differ significantly, courts may be forced to make non-economic judgments that affect efficiency. Land use and land value problems most often arise in urban drainage disputes, and have induced some courts to adopt different rules for those cases than they employ in rural drainage disputes.<sup>109</sup> Injunctive relief jeopardizes efficiency if it curtails a drainage that yields net profits. On the other hand, a decision to enjoin a drainage that generates net costs guarantees an efficient result. In any case, if the injunctive remedy is not tied to efficiency, strategic behavior is inevitable.<sup>110</sup> However, the American drainage laws are liability

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<sup>105</sup>Transaction costs include "the costs of identifying the parties with whom one has to bargain, the costs of getting together with them, the costs of the bargaining process itself, and the costs of enforcing any bargain reached." A. Polinsky, *An Introduction to Law and Economics* 12 (1983). Strategic behavior is also a type of transaction cost. *Id.* at 18 n.11; see also *infra* note 106.

<sup>106</sup>Strategic behavior is a type of transaction cost that arises from alterations in bargaining position created by the court's choice of entitlement and remedy. For example, if the parties know that the court will enjoin even an efficient drainage, the injured party may "hold out" for a better deal than the efficient result would provide. See A. Polinsky, *supra* note 105, at 18-19; Polinsky, *The Simple Economics of Injunctive and Damage Remedies*, 32 *Stan. L. Rev.* 1075, 1092-96 (1980).

<sup>107</sup>See Polinsky, *supra* note 106, at 1094. In economic terms, the goal of the actual damages remedy is simply to force the improving landowner to internalize the costs of improvement. See, e.g., Tromans, *Nuisance—Prevention or Payment?*, 41 *Cambridge L.J.* 87, 105 (1982).

<sup>108</sup>For example, if a drainage yields net costs of \$100, theoretically that activity should be suspended. But, if the court undervalues damages by \$200 because of imperfect information, that drainage will likely continue. Likewise, imperfect information can lead courts to over-estimate damages, resulting in suspension of a net profitable drainage.

<sup>109</sup>See *supra* notes 39, 54, 73 & 101 and accompanying text. In rural settings, neighbors tend to use their lands similarly, and land values are usually not disparate. In urban settings, by contrast, neighboring lands are typically put to vastly different uses, and land values can differ significantly from one property to the next.

<sup>110</sup>See Polinsky, *supra* note 106, at 1092-93. A court that grants injunctive relief for any injurious drainage encourages the injured party to engage in strategic behavior.

rules only; they do not prescribe the appropriate relief for various economic circumstances. Historically, the common law automatically enjoined any nuisance.<sup>111</sup> Fortunately, courts applying the rules today do consider the economic consequences of potential remedies before granting relief.<sup>112</sup>

## 2. The Equity Goal

Liability rules that maximize efficiency are not *ergo* fair. Efficiency concerns only "the size of the pie."<sup>113</sup> Equity slices the pie, allocating costs (and sometimes benefits) to promote some (or someone's) conception of fairness.<sup>114</sup> For purposes of this analysis, fairness depends entirely on who must bear the costs of damages resulting from surface water drainage. If the improving landowner must bear the costs, the rule is fair. If the "innocent" neighbor must bear the costs, the rule is unfair.

Almost everyone would agree that a landowner who injures her neighbor by draining surface waters should compensate for those injuries. Aside from this intuitive sense of justice, there are other factors that suggest the improving landowner should bear the costs of drainage. Assuming that the drainage is intentional, the improving landowner is in a better position than her neighbor to foresee the extent of possible harm and take steps to prevent it.<sup>115</sup> Placing costs on the improver spurs the use of best available technology, within limits set by efficiency, to minimize total costs.<sup>116</sup>

Unfortunately, the expense of redistributing costs can undermine efficiency.<sup>117</sup> This tension between equity and efficiency diminishes as the costs of redistribution decrease.<sup>118</sup> In any case, fair cost allocation provides a

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<sup>111</sup>See Tromans, *supra* note 107, at 88-89, 97-98.

<sup>112</sup>See, e.g., Swanson v. Bishop Farm, Inc., 140 Vt. 606, 443 A.2d 464 (1982). "A proper resort to equity does not always invoke the application of extraordinary or severe relief by way of a mandatory injunction." *Id.* at 610, 443 A.2d at 466. This represents a trend in nuisance law since the 1970s recognizing the often immense economic consequences of granting equitable relief. See *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970).

<sup>113</sup>See A. Polinsky, *supra* note 105, at 7; see also Ogus & Richardson, *Economics and the Environment: A Study of Private Nuisance*, 36 Cambridge L.J. 284, 286 (1977).

<sup>114</sup>Polinsky, *supra* note 106, at 1084. This conception of "fairness" may cut down the middle, as in traditional tort law, to restore injured parties to their pre-injured status, or it may be weighted to redistribute income in accordance with some scheme of social welfare. See *id.* at 1100.

<sup>115</sup>Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. Chi. L. Rev. 681, 726 (1973).

<sup>116</sup>*Id.* at 724. For example, suppose a contemplated drainage will do \$500 damage to neighboring property, but that use of certain technology, costing only \$100, would reduce those damages by \$200. If the improving landowner is liable for the damage, she will certainly use that technology and save herself \$100. However, if she is immune from liability, she will have no incentive to use the technology. Beyond the obvious economic effects, this may have tremendous environmental consequences.

<sup>117</sup>See A. Polinsky, *supra* note 105, at 113.

<sup>118</sup>See *id.* at 9.

commendable yardstick for selecting between equally efficient alternatives.<sup>119</sup> Thus, for purposes of this analysis, the “best” liability rule is that which most fairly allocates costs without sacrificing efficiency.

### 3. A Hypothetical Setting for the Analysis

To facilitate the economic analysis, we will consider the effect of each liability rule on the following hypothetical case: Hamilton and Jefferson own abutting 300 acre farms. The farms are of equal value and the farmers cultivate the same crop. Jefferson’s land sits slightly higher than Hamilton’s. As a result, surface waters flow naturally from Jefferson to Hamilton, periodically flooding fifty acres of Hamilton’s land and rendering them unproductive.<sup>120</sup> Jefferson, by contrast, cultivates all but the ten acres of his farm where water accumulates.<sup>121</sup>

Suppose that Jefferson digs a ditch to drain these last ten acres for cultivation. The drainage yields a profit of \$200, but floods an additional five acres of Hamilton’s land, at a cost of \$100. Jefferson’s ditch therefore yields net profits of \$100, less transaction costs.

Irrked by Jefferson’s drainage, Hamilton responds by constructing a dam along the entire Hamilton/Jefferson border. Thanks to the dam, Hamilton can now cultivate his entire 300 acres. He realizes a profit of \$1100. But the dam causes periodic flooding that renders 150 acres of Jefferson’s land unproductive, at a cost of \$3000. Consequently, the dam generates net costs of \$1900, plus transaction costs.

The “best” liability rule would entitle Jefferson’s ditch, which yields net profits, but not Hamilton’s dam, which generates net costs. While entitling Jefferson’s ditch, the “best” rule would compensate Hamilton for his damages (\$100).

## B. *The Common Enemy Rule*

### 1. Efficiency

The pure (*i.e.*, unmodified) common enemy rule permits landowners to cast surface waters onto their neighbors with impunity.<sup>122</sup> It entitles Hamilton’s net unprofitable dam as well as Jefferson’s net profitable ditch with total disregard for the economic consequences.

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<sup>119</sup>See Polinsky, *supra* note 106, at 1084.

<sup>120</sup>It is important to remember that none of the liability rules entitles a landowner to protection from naturally occurring drainage, *i.e.*, drainage that results merely from the lie of the land. Liability only attaches, if at all, where a landowner takes some action to alter surface water flows.

<sup>121</sup>Note that under our efficiency and equity goals it should not matter that this drainage occurs in a rural setting as opposed to an urban setting, except that the presumption of equal land values and similar land uses is perhaps more plausible in a rural setting. See *supra* note 109 and accompanying text.

<sup>122</sup>See *supra* note 14 and accompanying text.

The common enemy doctrine has grown more efficient as its recent modifications have extended liability. For example, in states that hold landowners liable for artificial drainways,<sup>123</sup> both Jefferson and Hamilton might be able to recover for the damages they have suffered.<sup>124</sup> This would certainly promote efficiency in the case of Hamilton's dam because under any remedy its use will likely discontinue, and that is the efficient result. In the case of Jefferson's ditch, where efficiency was promoted even under the pure common enemy rule, the modification will also promote efficiency unless the court enjoins the ditch.

Efficiency may also improve under the "reasonable care" modification of the common enemy doctrine, assuming that courts applying this modification utilize a cost-benefit analysis to determine reasonableness.<sup>125</sup> However, some states employing the "reasonable care" modification do not test the drainage itself, but merely the resulting damage; if the damage is reasonably necessary to the desired improvement, then liability does not attach, even if the improvement itself is unreasonable.<sup>126</sup> In those states, as long as the damage resulting from Hamilton's dam was a reasonably necessary consequence of dam construction and use, the courts will not grant Jefferson any relief. Therefore, the modification does not appreciably improve the common enemy doctrine's efficiency. Similarly, the modification prohibiting negligent or malicious discharges fails to enhance efficiency because it entitles even unprofitable drainages so long as they relate to some improvement and are not otherwise negligent.<sup>127</sup>

## 2. Equity

While the pure common enemy doctrine is simply indifferent to economic efficiency, its disregard for equity is by design. By insulating the improving landowner from liability in every case, the rule permits cost externalization to foster development. It permits neither Jefferson nor Hamilton to recover for their damages, and therefore is not equitable.

The recent modifications of the common enemy doctrine were designed specifically to remedy the perceived unfairness of the extreme rule.<sup>128</sup>

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<sup>123</sup>See *supra* note 21 and accompanying text.

<sup>124</sup>Most states would consider Jefferson's ditch an artificial drainage. See, e.g., *Buffalo Sewer Authority v. Cheektowaga*, 20 N.Y.2d 47, 228 N.E.2d 386, 281 N.Y.S.2d 326 (1967).

<sup>125</sup>For a court employing this modification, see, e.g., *Morris v. McNicol*, 83 Wash. 2d 491, 519 P.2d 7 (1974); see also *supra* note 23 and accompanying text.

<sup>126</sup>See, e.g., *Seventeen, Inc. v. Pilot Life Insurance Co.*, 215 Va. 74, 205 S.E.2d 648 (1974).

<sup>127</sup>See, e.g., *Paasch v. Brown*, 190 Neb. 421, 208 N.W.2d 695 (1973); see also *supra* note 22 and accompanying text.

<sup>128</sup>See *Kinyon & McClure, Interferences with Surface Waters*, 24 Minn. L. Rev. 891, 913 (1940).



However, they do not go far enough. So long as the improving landowner uses natural drainways,<sup>129</sup> exercises good faith,<sup>130</sup> or employs reasonable care in draining surface waters,<sup>131</sup> no liability attaches and injured neighbors cannot recover their actual damages.

### C. *The Natural Flow Theory*

#### 1. Efficiency

The goal of the natural flow theory is not efficient development, but preservation of the *status quo* between neighboring landowners.<sup>132</sup> Nevertheless, this rule does *permit* efficiency by placing courts in a position to grant a remedy that achieves an efficient result. Assuming that courts base remedy decisions on efficiency, the rule discourages "strategic behavior" that might prevent parties from bargaining to an efficient result.

Under the unmodified natural flow theory, Jefferson and Hamilton are each liable for the harm caused by their activities. The court's task is to fashion a remedy suitable to ameliorate the harm. As we have seen,<sup>133</sup> under the efficiency goal, the "suitable" remedy generally prohibits (or discourages) unprofitable drainage and entitles (or encourages) profitable drainage.

Jefferson's ditch produces a net profit of \$100, less transaction costs. Therefore, under the efficiency goal, his drainage should continue. A court employing the natural flow theory can ensure this by restricting recovery to money damages not exceeding the aggregate profit (less transaction costs, including court costs).<sup>134</sup> By so doing, the court also encourages the parties to negotiate (at least, it does not prevent them from negotiating) to an efficient settlement.<sup>135</sup> However, if the court enjoins the ditch, efficiency is lost.<sup>136</sup> Moreover, if Hamilton knows beforehand that the court will

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<sup>129</sup>See *supra* notes 21 & 123-24 and accompanying text.

<sup>130</sup>See *supra* notes 22 & 127 and accompanying text.

<sup>131</sup>See *supra* notes 23, 124-26 and accompanying text.

<sup>132</sup>See *supra* note 40 and accompanying text.

<sup>133</sup>See generally *supra* Part IIA of this article.

<sup>134</sup>Note that this assumes that the court has perfect information concerning the nature and extent of the damages. To the extent that imperfect information may cause the court to over-estimate or under-estimate damages, inefficiency may result. See *supra* note 108 and accompanying text. In fact, the natural flow theory has been criticized because of the informational (*i.e.*, evidentiary) problems it creates. See *supra* note 50 and accompanying text. This problem also affects the reasonable use rule. See *supra* note 103 and accompanying text. Therefore, because this is a comparative analysis, the problem of imperfect information does not provide grounds for choosing between the natural flow theory and the reasonable use rule.

<sup>135</sup>See *supra* note 107 and accompanying text. By restricting recovery to actual damages, the courts also discourage *de minimis* lawsuits, a major concern in states employing the civil law rule. See, *e.g.*, *Schmitt v. Kirkpatrick*, 245 Iowa 971, 63 N.W.2d 228 (1954).

<sup>136</sup>As we have seen, courts today do consider efficiency before granting relief. A court applying the civil law rule would likely not grant an injunction under these circumstances.

enjoin Jefferson's ditch, even though it is efficient, he will likely engage in "strategic behavior" that prevents the parties from bargaining to an efficient result.<sup>137</sup>

In the case of Hamilton's dam, it theoretically makes no difference whether the court enjoins the dam or merely awards Jefferson's actual damages. In either case, Hamilton will stop damming the flow because it costs him \$1900 plus transaction costs more than it benefits him.

Clearly then, the unmodified natural flow theory of liability permits courts, and the parties before them, to achieve efficiency in every case. However, to the extent courts have modified the civil law rule to limit liability, efficiency has been compromised.<sup>138</sup> In every case where a modification insulates improving landowners from liability, unprofitable drainages will continue unabated.<sup>139</sup> On the other hand, the modification fashioned by the California courts actually enhances efficiency by placing an affirmative duty on the injured party to take all reasonable measures to minimize damages.<sup>140</sup>

## 2. Equity

The very purpose of the natural flow theory is to preserve the natural state of affairs between neighboring properties regarding surface water drainage.<sup>141</sup> To that end, courts applying this rule either prohibit (*i.e.*, enjoin) or require compensation for any injurious change in the *status quo*. As a result, costs are fairly allocated; *i.e.*, they are born ultimately

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<sup>137</sup>An efficient result in this case lies anywhere between \$100 and \$200, less transaction costs. If Hamilton knows that the court will enjoin Jefferson's ditch, he may hold-out for a better settlement than Jefferson is willing to agree to. See Polinsky, *supra* note 106, at 1092-94. This extortionate behavior is averted where the court's remedy is limited to actual damages.

<sup>138</sup>The civil law rule has been modified to limit liability where the harmful drainage (1) used natural drainways, (2) was reasonable and not negligent, or (3) occurred in an urban area. See *supra* notes 51-53 and accompanying text. Only the second modification would affect Jefferson and Hamilton. Jefferson's drainage is reasonable (assuming reasonableness is determined in a cost-benefit analysis) and apparently not negligent. Under this modification, Jefferson would not be liable to Hamilton. This would only affect efficiency to the extent it encourages Jefferson to engage in "strategic behavior." On the other hand, this modification would totally defeat an equitable solution because Hamilton would be unable to recover his actual damages.

<sup>139</sup>The situation is precisely analogous to that under the common enemy doctrine. See *supra* note 122 and accompanying text. In addition, to the extent that improving landowners are insulated from liability, they may engage in "strategic behavior" that prevents the parties from negotiating an efficient settlement. See *supra* notes 106 & 136 and accompanying text.

<sup>140</sup>See *supra* notes 54-57 and accompanying text.

<sup>141</sup>See *supra* notes 40-41 and accompanying text.

by the improving landowner.<sup>142</sup> In our hypothetical, Jefferson would have to compensate Hamilton for the damages caused by his ditch, and Hamilton would have to compensate Jefferson for the damages caused by his dam. But the natural flow theory does not equitably allocate costs at the expense of efficiency. To the contrary, the rule achieves the fair result while, in every case, permitting an efficient result, dependent only on the remedy the court chooses.<sup>143</sup>

To the extent modifications of the natural flow theory shield improving landowners from liability, the costs of resulting damages will be shouldered unfairly by the "innocent" neighbors.<sup>144</sup> The California modification, on the other hand, enhances equity just as it enhances efficiency,<sup>145</sup> by placing an affirmative duty on the neighboring landowner to take reasonable care to protect her lands from harm.<sup>146</sup> To the extent the neighbor fails to reasonably protect her lands, the court will deny recovery.<sup>147</sup>

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<sup>142</sup>Note that there is at least one situation where, it may be claimed, the civil law rule does not achieve the "equitable" result. For instance, if the court enjoined Jefferson's cost-efficient ditch, Jefferson would suffer a loss of the \$100 profit, plus the cost of digging the ditch, plus transaction costs. Aside from being inefficient, this result is arguably inequitable. One solution would be to require Hamilton to pay for the injunction, to compensate Jefferson for his costs. This solution has been championed on efficiency grounds by at least one commentator, and adopted by one court. See *Spur Industries Inc. v. Del E. Webb Dev. Co.*, 108 Ariz. 178, 494 P.2d 700 (1972); Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. Chi. L. Rev. 681, 738-39 (1973).

The "fair" allocation of costs may also depend on actions taken or not taken by the improving landowner's neighbor to prevent damage to her property. Under the goal of equity without sacrificing efficiency, it would be unfair to make the improving landowner bear costs that could have been costlessly avoided by the neighbor. The California modification to the natural flow theory avoids this possibility by placing an affirmative duty on the neighbor to use reasonable care to prevent unnecessary harm. See *supra* notes 54-57, 139 and accompanying text; see also *infra* notes 144 & 145 and accompanying text.

<sup>143</sup>See *supra* notes 131-39 and accompanying text.

<sup>144</sup>This result attends (1) the natural drainways modification, *supra* note 51 and accompanying text; (2) the reasonable use modification, *supra* note 52 and accompanying text; and (3) the urban development modification, *supra* note 53 and accompanying text.

<sup>145</sup>See *supra* note 139 and accompanying text.

<sup>146</sup>See *supra* notes 54-57, 140 and accompanying text.

<sup>147</sup>See *Keys v. Romley*, 64 Cal. 2d at 411, 412 P.2d at 538, 50 Cal. Rptr. at 282; *Sheffet v. County of Los Angeles*, 3 Cal. App. 3d 720, 729-30, 84 Cal. Rptr. 11, 16-17 (1970). This does not necessarily mean that the neighbor must sustain costs to prevent harm. It merely prevents neighbors from unfairly taking advantage of the improving landowner, for example, by aggravating the damage. See *supra* note 56 and accompanying text.

## D. *The Reasonable Use Rule*

### 1. Efficiency

Liability under the reasonable use rule depends primarily on a cost-benefit analysis; if the drainage yields net benefits, the improving landowner is not liable for damages.<sup>148</sup> Efficiency, therefore, is built into the rule. Discounting the possibility of imperfect information, the reasonable use rule will always yield an efficient result because it will only impose liability for net unprofitable drainages.<sup>149</sup> Under this rule, Hamilton will be liable, but Jefferson will not.

However, like the natural flow theory, the reasonable use rule is subject to imperfect information that can impair the court's cost-benefit analysis and jeopardize efficiency.<sup>150</sup> Unless the court has accurate information concerning the drainage, it may over-estimate the costs and/or benefits. For example, if the court's information suggests that before Jefferson's ditch only twenty acres of Hamilton's land was flooded (instead of fifty acres), then the court will conclude that the ditch flooded an additional thirty-five acres of Hamilton's land (instead of five). As a result, the court might estimate Hamilton's damages at \$700 (\$600 more than his true damages and \$500 more than Jefferson's aggregate benefits). The court would then hold Jefferson liable and effectively enjoin what is, in reality, an efficient drainage.

Under the reasonable use rule, the court's remedy decision should not affect efficiency, assuming again that the court's cost-benefit analysis is not faulty.<sup>151</sup> Remedies can only affect efficiency when liability is imposed. But, under this rule, liability is only imposed on unprofitable drainages; in our hypothetical, only Hamilton would be liable under the reasonable use rule. Whether the court enjoins his dam or merely awards Jefferson's actual damages, Hamilton will (theoretically) stop damming the flow of surface waters.

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<sup>148</sup>See *supra* note 77 and accompanying text.

<sup>149</sup>Note that strategic behavior should not be a problem under this rule because the entitlement is never certain until the parties get to court. Of course, if the improving landowner is fairly certain that his drainage is "reasonable," then she is in a superior bargaining position because she knows her neighbor has no chance of recovering even actual damages.

<sup>150</sup>See *supra* note 103 and accompanying text.

<sup>151</sup>Of course, if the court has imperfect information that impairs its cost-benefit analysis, the court might hold the improving landowner liable for an efficient drainage. The court's subsequent remedy decision then determines whether an efficient result is achieved, in spite of the faulty cost-benefit analysis.

## 2. Equity

Courts employing the reasonable use rule praise its fairness,<sup>152</sup> but they are like the economist who maintains that if the pie is big enough, it does not matter how it is sliced. Once the court concludes that Jefferson's ditch is reasonable (i.e., efficient), the case is over; Jefferson keeps his ditch and his \$200 profit, and Hamilton must bear the \$100 cost. This result violates fundamental conceptions of fairness and negates any incentive the improving landowner might have to minimize costs, including environmental degradation.<sup>153</sup> Thus, under the reasonable use rule, the fair result is achieved only when the disputed drainage is inefficient; an efficient drainage is never combined with a fair result.

### E. *Results of the Analysis*

#### 1. Efficiency

Both the natural flow theory and the reasonable use rule allow courts to achieve an efficient result in every case. However, both rules are constrained by evidentiary problems that can affect efficiency, and the civil law rule's efficiency ultimately depends on the court's choice of remedy.<sup>154</sup> The common enemy doctrine disregards economic efficiency entirely.

#### 2. Equity

Where fairness depends on the appropriate allocation of drainage costs, only the natural flow theory is consistently fair. Under that rule, the improving landowner is always liable for damages caused to neighboring properties. And the reasonable use rule only compensates injured neighbors when the disputed drainage is inefficient; so long as the drainage generates net profits, the improving landowner is entitled to externalize some of her costs (e.g., the damages).

Clearly then, the natural flow theory is the "best" liability rule because it most fairly allocates costs without sacrificing efficiency.

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<sup>152</sup>See, e.g., *Butler v. Bruno*, 115 R.I. 264, 341 A.2d 735, 741 (1975).

<sup>153</sup>See *supra* notes 115-16 and accompanying text.

<sup>154</sup>To the extent this is a problem, it is more appropriately labelled a judicial problem than a natural flow theory problem. See *infra* note 158.

## CONCLUSION

Since 1940, virtually every court that has embraced the reasonable use rule for resolving surface water conflicts has justified the change on fairness and efficiency grounds.<sup>155</sup> But not one court has ever tested this justification. New courts that adopt the rule simply repeat the reasons given by other courts.<sup>156</sup> Unfortunately, no matter how many times the rationale is repeated, saying it does not make it so.

The reasonable use rule is clearly not fair, where fairness depends on the equitable allocation of costs. Only the civil law's natural flow theory consistently imposes all the costs of drainage on the improving landowner without sacrificing efficiency.<sup>157</sup>

The reasonable use rule does not promote efficiency any better than the pure natural flow theory, which permits courts to achieve an efficient result in every case, subject only to evidentiary problems and choice of remedy. Though choice of remedy is theoretically not a problem for the reasonable use rule,<sup>158</sup> the rule is subject to the same evidentiary difficulties as the civil law rule. Consequently, there is no convincing reason for preferring the reasonable use rule over the natural flow theory on efficiency grounds.

In the final analysis, where economic goals prevail, the civil law's natural flow theory is preferable to both the reasonable use rule and the common enemy doctrine because it fairly allocates costs, while permitting the court to achieve an efficient result in every case. This conclusion is remarkable for three reasons: (1) the natural flow theory existed long before economic goals prevailed; (2) courts and commentators have long criticized the civil law rule for being uneconomic; and (3) the reasonable use rule emerged specifically to advance economic goals.

Obviously then, the current trend in favor of the reasonable use rule is misguided. Courts should reconsider decisions that adopt the reasonable use rule over the natural flow theory, since the latter is more appropriate to their stated goals. And, in the future, courts should beware of accepting as gospel the untested assumptions and reasoning of other courts.

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<sup>155</sup>See *supra* notes 8-9 and accompanying text.

<sup>156</sup>See, e.g., *Pendergrast v. Aiken*, 293 N.C. 201, 215-16, 236 S.E.2d 787, 796 (1977) (citing *Butler v. Bruno*, 115 R.I. 264, 341 A.2d 735 (1975)).

<sup>157</sup>Of course, the modifications of this rule have, to greater or lesser extents, diminished the rule's fairness, with the exception of the California modification which actually enhances both equity and efficiency. See *supra* notes 139 & 144 and accompanying text.

<sup>158</sup>Choice of remedy is really not a problem of the natural flow theory either; it is more appropriately a problem of the courts. The natural flow theory merely gives courts the opportunity to undermine efficiency by their choice of remedy because liability is imposed in every case. The other liability theories avoid this "problem" by not giving the courts the opportunity to choose a remedy in every case.

